CLAIMS

1. A method for enhancing signal-to-noise ratio associated with a transmitted digital communication signal without affecting its power flux density, the method comprising the following steps performed in a transmitter:

selecting a reduced signaling rate that is a fraction 1/n of an original signaling rate R;

randomizing the reduced signaling rate signals to produce a randomized signal at the original signaling rate R; and

transmitting the randomized signal;

wherein the reduced signaling rate results in an enhanced signal-to-noise ratio per bit of information, and wherein transmission of the randomized signal at the original signaling rate ensures that power flux density will be unchanged.

2. A method as defined in claim 1, and further comprising the following steps performed in a receiver:

receiving and demodulating the transmitted randomized signal; and

recovering data at the reduced signaling rate.

3. A method as defined in claim 1, wherein the randomizing step comprises:

generating a pseudorandom noise sequence of bits at the original signaling rate R; and

logically combining the pseudorandom noise sequence with the reduced signaling rate signals to produce the randomized signal.

4. A method as defined in claim 3, wherein the logically combining step comprises performing a logical exclusive OR operation.

5. A method as defined in claim 3, and further comprising the following steps performed in a receiver:

generating a pseudorandom noise sequence; and

logically combining the pseudorandom noise sequence generated in the receiver with the received data signals, to recover the signals transmitted at the reduced signaling rate.

6. Digital communication apparatus, comprising:

means for reducing the rate of an information data stream to be transmitted from an original signaling rate R to a selected reduced rate;

a pseudorandom noise source generating a stream of practically random data at the original signaling rate R;

means for logically combining the reduced signaling rate information data stream and the data stream from the pseudorandom noise generator; and

means for transmitting the logically combined data stream at the original signaling rate;

wherein signal-to-noise performance is enhanced to compensate for rain attenuation without increasing power flux density levels.

7. Digital communication apparatus as defined in claim 6, wherein:

the means for logically combining comprises a logical exclusive OR circuit.

8. Digital communication apparatus as defined in claim 6, and further comprising:

means for receiving and demodulating the logically combined data stream;

a second pseudorandom noise source located near the means for receiving, for generating a stream of data identical with the one produced by the first pseudorandom noise source; and

means for logically combining the demodulated data stream with the data stream from the second pseudorandom noise source, for recovering the original data stream at the reduced signaling rate.